

REMARKS

This application has been reviewed in light of the Office Action dated December 27, 2002. Claims 1-10, 38, and 39 are pending in this application, with Claims 9 and 10 having been indicated as containing allowable subject matter. Claims 1 and 38 are in independent form. Claims 11-37 have been cancelled, without prejudice or disclaimer of the subject matter presented therein. Claims 38 and 39 have been added to provide Applicants with a more complete scope of protection. Claims 1-3, 5, and 7-10 have been amended to define more clearly what Applicants regard as their invention. Applicants note that the changes to Claims 9 and 10 merely change the reference to "means for reading" to --a read-out unit that reads out-- and believe that these changes do not affect the indication that these claims contain allowable subject matter. Favorable reconsideration is requested.

The Office Action includes an objection to the title of the invention as not being descriptive. Applicants have amended the title to read --COLOR FILTER ARRAY AND IMAGE PICKUP APPARATUS HAVING A COLOR FILTER ARRAY-- and believe that the amended title is clearly indicative of the invention to which the claims are directed. Accordingly, Applicants respectfully request withdrawal of the objection to the title.

The drawings were objected to for failing to label Figures 1 and 2 "Prior Art" and for including reference numeral 102, which was not mentioned in the description. In response, Applicants submit herewith a Letter Transmitting Corrected Drawings that labels Figures 1 and 2 --Prior Art--. Applicants have also amended page 17, line 23 of the specification to correctly refer to the --floating diffusion region 102-- instead of the "floating diffusion region 101." Applicants believe that these actions remedy the

objections to the drawings and respectfully request withdrawal of these objections.

Claims 1-8 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,323,901 (Ukita). Applicants respectfully traverse these rejections and submit that amended independent Claim 1 and newly added independent Claim 38, together with the remaining dependent claims, are patentably distinct from Ukita for at least the following reasons.

Claim 1 requires an image pickup apparatus including a plurality of pixels and a color filter array of four colors. The color filter array of four colors is disposed on the plurality of pixels and has a periodicity of two rows x two columns. The colors of color filters in a periodical unit of two rows x two columns are all different from each other and have fixed positions.

Important features of Claim 1 include the color filter array having a periodicity of two rows x two columns, wherein colors of color filters in a periodical unit of two rows x two columns have fixed positions. Support for these features can be found in the specification at least at page 9, lines 1-9, which states that "Fig. 3 shows a pattern of color filters according to the first embodiment of the invention. This pattern has a periodicity of two pixels in the horizontal direction and two pixels in the vertical direction. In a pattern of two pixels in the horizontal direction and two pixels in the vertical direction, the first row has G and Ye color filters disposed in this order from the left, and the second row has Cy and Mg color filters disposed in this order from the left." Further support for these features can be found in reference to Figure 4. In other words, as shown in Figures 3 and 4, the pattern of colors repeats every two rows in the vertical direction and repeats every two columns in the horizontal direction. Further, for every block of four pixels (two rows x two columns), each color occupies the same fixed position. For example, green is

always in the upper left corner of a block of four pixels shown in Figure 4. (It is to be understood, of course, that the scope of Claim 1 is not limited to the details of this embodiment, which is referred to only for purposes of illustration.)

As a disclosure of such a color filter arrangement, the Office Action points to Ukita's Figure 2. In particular, the Office Action states that Ukita's Figure 2 discloses "a color filter array [having] a periodicity of two rows x two columns, wherein the four colors are all different" (See page 3 of the Office Action.) However, Ukita's Figure 2, as well as Figures 8, 10-13, 18, and 22, are understood to disclose a color filter array having a periodicity of at least *four* rows x two columns, not *two* rows x two columns as required by Claim 1. To elaborate, the color filter arrangement in these figures repeats at least every four rows, and not every two rows. For example, Ukita's Figure 2 shows Ye, Mg, Ye, G in the first four rows (y0-y3) of column zero (x0), meaning that the pattern takes at least four rows to repeat itself. In contrast, Claim 1 requires that the pattern repeat every two rows.

Further, Claim 1 requires that the colors of color filters in a periodical unit of two rows x two columns have fixed positions. However, Ukita's Figures 2, 8, 10-13, 18, and 22, are not understood to disclose such a feature. For example, Ukita's Figure 2 does not show green always occupying the same position within a group of four pixels (two rows x two columns). The position of green is alternated with Magenta.

Accordingly, nothing in Ukita is believed to teach or suggest to a person having ordinary skill in the relevant art the color filter array having a periodicity of two rows x two columns, wherein colors of color filters in a periodical unit of two rows x two columns have fixed positions. Therefore, Applicants submit that Claim 1 is patentable over Ukita and respectfully request withdrawal of the Section 102(e) rejection.

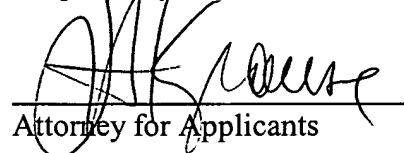
Independent Claim 38 includes the same features of the color filter array having a periodicity of two rows x two columns, wherein colors of color filters in a periodical unit of two rows x two columns have fixed positions as discussed above. Accordingly, Claim 38 is believed to be patentable for at least the same reasons as discussed in connection with Claim 1.

Newly added Claim 39, along with the other rejected claims in this application, depend from either Claim 1 or Claim 38 discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and the allowance of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


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